

2016 Massachusetts HIV/AIDS Epidemiologic Profile

Detailed Data Tables: Men Who Have Sex with Men (MSM)

Recent changes to the presentation of Massachusetts HIV/AIDS surveillance data

Effective January 1, 2011, the Massachusetts Department of Public Health (MDPH), Bureau of Infectious Disease and Laboratory Sciences, HIV/AIDS fact sheets, epidemiologic reports and other HIV data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts. As of January 1, 2016, this resulted in the removal of 4,913 HIV/AIDS cases, of which 1,099 have died and 3,814 were living. These persons living with HIV infection may still continue to reside and receive care in the Commonwealth. The total number of persons living with HIV infection, regardless of location at diagnosis, is the basis for MDPH service planning. Please note that previous HIV/AIDS fact sheets, data reports and presentations included cases that may have been first diagnosed in another state.

Also effective January 1, 2011, the MDPH HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to eliminate the presumed heterosexual risk category for men; those cases have been reassigned to the no identified risk (NIR) category. The presumed heterosexual risk category was used with the intention of identifying HIV risk for women when sex with men is the only reported risk factor, there is no evidence of current or past injection drug use (IDU), and behavioral risk and HIV status information about male sexual partners are unknown. The rationale for the application of the presumed heterosexual risk category to women only has been addressed in the MDPH Office of HIV/AIDS report "Intersecting Risks: HIV Infection among Heterosexual Women and Men in Massachusetts." (2010) http://www.mass.gov/Eeohhs2/docs/dph/aids/intersecting_risks.pdf. The CDC reports men diagnosed with HIV infection who report sex with women as their only risk factor, without corresponding partner risk or HIV status information, in the NIR category. This revision to report presumed heterosexual male HIV/AIDS cases as NIR will bring Massachusetts HIV/AIDS case reporting for men in alignment with CDC standards. The MDPH will maintain presumed heterosexual and heterosexual risk categories for women.

Explanation of Estimated Rates for MSM and non-MSM

Estimated MSM Prevalence Rate: An estimate of the proportion of MSM that are currently living with HIV infection. The numerator is the number of MSM (including MSM/IDU) who are living with HIV infection, ages 18 to 64, as of a specific date and the denominator is the estimated size of the MSM population. The size of the MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18-64 years, reporting same-sex partner (or opposite and same-sex partner), on the 2013 and 2014 Massachusetts BRFSS (6.4%), by the number of 18 to 64 year old men in Massachusetts as reported in the 2010 Census (2,064,804), to get 132,147. The prevalence rate in MSM is calculated by the formula:

$$\begin{aligned}\text{HIV/AIDS prevalence rate for MSM as of 1/1/16} &= (\text{number of MSM living with HIV infection, ages 18-64, on 1/1/16} \div \text{estimated population size of MSM}) \times 100,000 \\ &= ((7,595 / (.064 \times 2,064,804)) \times 100,000 \\ &= (7,595 / 132,147) \times 100,000 \\ &= 0.05747367 \times 100,000 \\ &= \mathbf{5,747.4 \text{ per } 100,000}\end{aligned}$$

Estimated non-MSM Prevalence Rate: An estimate of the proportion of non-MSM that are currently living with HIV infection used as a basis of comparison to the MSM prevalence rate. The numerator is the number of non-MSM, ages 18 to 64, who are living with HIV infection as of a specific date and the denominator is the estimated size of the non-MSM population. The size of the non-MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18-64 years, reporting sex with only women, on the 2013 and 2014 Massachusetts BRFSS (93.6%) by the number of 18 to 64 year old men in Massachusetts as reported in the 2010 Census (2,064,804), to get 1,932,657. The prevalence rate in non-MSM is calculated by the formula:

$$\begin{aligned}\text{HIV/AIDS prevalence rate for non-MSM as of 1/1/16} &= (\text{number of non-MSM living with HIV infection, ages 18-64 on 1/1/16} \div \text{estimated population size of non-MSM}) \times 100,000 \\ &= ((5,307 / (.936 \times 2,064,804)) \times 100,000 \\ &= (5,307 / 1,932,657) \times 100,000 \\ &= 0.002745961 \times 100,000 \\ &= \mathbf{274.6 \text{ per } 100,000}\end{aligned}$$

Estimated Average Annual MSM HIV Diagnosis Rate: An estimate of the average proportion of MSM that are diagnosed with HIV infection over a three-year period. The numerator is the average number of MSM (including MSM/IDU) who were diagnosed with HIV infection over the three-year period and the denominator is the estimated size of the MSM population. The size of the MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18-64 years, reporting same-sex partner (or opposite and same-sex partner), on the 2013 and 2014 Massachusetts BRFSS (6.4%), by the number of 18 to 64 year old men in Massachusetts as reported in the 2010 Census (2,064,804), to get 132,147. The estimated HIV diagnosis rate in MSM is calculated by the formula:

Average annual HIV diagnosis rate among MSM, 2012–2014	$(((\text{number of MSM diagnosed with HIV infection in 2012} + \text{number of MSM diagnosed with HIV infection in 2013} + \text{number of MSM diagnosed with HIV infection in 2014}) \div 3) \div \text{estimated population size of MSM}) \times 100,000$ $= ((959 \div 3) / (.064 \times 2,064,804)) \times 100,000$ $= (319.67 / 132,147) \times 100,000$ $= 0.002419015 \times 100,000$ $= \mathbf{241.9 \text{ per } 100,000}$
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Estimated Average Annual non-MSM HIV Diagnosis Rate: An estimate of the average proportion of non-MSM that are diagnosed with HIV infection over a three-year period used as a basis of comparison to the MSM diagnosis rate. The numerator is the average number of non-MSM who were diagnosed with HIV infection over the three-year period and the denominator is the estimated size of the non-MSM population. The size of the non-MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18-64 years, reporting sex with only women, on the 2013 and 2014 Massachusetts BRFSS (93.6%) by the number of 18 to 64 year old men in Massachusetts as reported in the 2010 Census (2,064,804), to get 1,932,657. The estimated HIV diagnosis rate in non-MSM is calculated by the formula:

Average annual HIV diagnosis rate among non-MSM, 2012–2014	$(((\text{number of non-MSM diagnosed with HIV infection in 2012} + \text{number of non-MSM diagnosed with HIV infection in 2013} + \text{number of non-MSM diagnosed with HIV infection in 2014}) \div 3) \div \text{estimated population size of non-MSM}) \times 100,000$ $= ((502 \div 3) / (.936 \times 2,064,804)) \times 100,000$ $= (167.333 / 1,932,657) \times 100,000$ $= 0.0000865820 \times 100,000$ $= \mathbf{8.7 \text{ per } 100,000}$
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Table 1. Number and percentage distribution of men diagnosed with HIV infection by exposure mode and year of diagnosis: Massachusetts¹, 2005–2014²

	MSM		IDU		MSM/ IDU		HTSX		Undeter- mined ³		Total ⁴
	N	%	N	%	N	%	N	%	N	%	N
2005	350	53%	92	14%	24	4%	36	5%	161	24%	663
2006	346	58%	50	8%	21	4%	41	7%	134	23%	595
2007	299	55%	57	10%	22	4%	27	5%	138	25%	544
2008	297	55%	46	8%	29	5%	29	5%	137	25%	544
2009	321	59%	35	6%	18	3%	27	5%	143	26%	545
2010	295	59%	43	9%	25	5%	28	6%	108	22%	502
2011	273	55%	40	8%	20	4%	24	5%	138	28%	497
2012	323	62%	23	4%	22	4%	31	6%	123	23%	525
2013	309	61%	24	5%	14	3%	16	3%	145	28%	510
2014	288	61%	15	3%	15	3%	9	2%	145	31%	475

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available 10 year period after the implementation of HIV infection reporting in 1999.

³ Includes men having sex with a woman of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

⁴ Totals include pediatric and blood/blood products exposure modes.

MSM = Male-to-Male Sex; IDU = Injection Drug Use; HTSX = Heterosexual Sex

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data are current as of 3/1/16 and may be subject to change

Table 2. Number and percentage distribution of people diagnosed with HIV infection by sex at birth and exposure mode: Massachusetts¹, 2012–2014²

Exposure mode:	Men		Women		State Total	
	N	%	N	%	N	%
Male-to-male sex (MSM)	920	61%	N/A	N/A	920	45%
Injection drug use (IDU)	62	4%	43	8%	105	5%
MSM/IDU	51	3%	N/A	N/A	51	3%
Heterosexual sex	56	4%	95	18%	151	7%
Other	8	1%	3	1%	11	1%
Total undetermined/other	413	27%	376	73%	789	39%
- Pres. HTSX ³	N/A	N/A	276	53%	276	14%
- Undetermined ⁴	413	27%	100	19%	513	25%
Total	1,510	100%	517	100%	2,027	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Includes woman having sex with a man of unknown HIV status or risk. This category is limited to women.

⁴ Includes man having sex with a woman of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

Pres. HTSX = Presumed Heterosexual Sex; N/A = Not Applicable

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data are current as of 3/1/16 and may be subject to change

Table 3. Number and percentage distribution of people living with HIV infection on December 31, 2015 by sex at birth and exposure mode: Massachusetts¹

Exposure mode:	Men		Women		Total	
	N	%	N	%	N	%
Male-to-male sex (MSM)	7,683	53%	N/A	N/A	7,683	38%
Injection drug use (IDU)	2,330	16%	1,230	21%	3,560	18%
MSM/IDU	701	5%	N/A	N/A	701	3%
Heterosexual sex	828	6%	1,991	34%	2,819	14%
Other	230	2%	183	3%	413	2%
Total undetermined/other	2,667	18%	2,429	42%	5,097	25%
• Pres. HTSX ²	N/A	N/A	1,894	32%	1,894	9%
• Undetermined ³	2,667	18%	535	9%	3,202	16%
Total	14,439	100%	5,833	100%	20,272	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

² Includes woman having sex with a man of unknown HIV status or risk. This category is limited to women.

³ Includes man having sex with a woman of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

N/A=Not Applicable

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data are current as of 3/1/16 and may be subject to change

Table 4. Number and percentage distribution of men diagnosed with HIV infection by exposure mode and race/ethnicity: Massachusetts¹, 2012–2014²

Race/ Ethnicity:	MSM		IDU		MSM/ IDU		HTSX		Undeter- mined ²	
	N	%	N	%	N	%	N	%	N	%
White (NH)	492	53%	17	27%	37	73%	8	14%	95	23%
Black (NH)	126	14%	11	18%	-- ⁴	-- ⁴	26	46%	171	41%
Hispanic/Latino	250	27%	32	52%	10	20%	22	39%	130	31%
API	42	5%	-- ⁴	-- ⁴	-- ⁴	-- ⁴	0	0%	-- ⁴	-- ⁴
Other/Und.	10	1%	-- ⁴	-- ⁴	0	0%	0	0%	-- ⁴	-- ⁴
Total⁵	920	100%	62	100%	51	100%	56	100%	413	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Includes men having sex with a woman of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

⁴ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

⁵ Total includes numbers suppressed for the assurance of confidentiality

(NH) = Non-Hispanic, API = Asian/Pacific Islander, Und. = Undetermined

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data are current as of 3/1/16 and may be subject to change

Table 5. Number and percentage distribution of men living with HIV infection on December 31, 2016 by exposure mode and race/ethnicity: Massachusetts¹

Race/ Ethnicity:	MSM		IDU		MSM/ IDU		HTSX		Undeter- mined ²	
	N	%	N	%	N	%	N	%	N	%
White (NH)	5,151	67%	704	30%	438	62%	153	18%	678	25%
Black (NH)	1,016	13%	557	24%	114	16%	383	46%	1,225	46%
Hispanic/Latino	1,262	16%	1,041	45%	138	20%	275	33%	665	25%
API	193	3%	17	1%	-- ³	-- ³	-- ³	-- ³	85	3%
Other/Und.	61	1%	11	<1%	-- ³	-- ³	-- ³	-- ³	14	1%
Total⁴	7,683	100%	2,330	100%	701	100%	828	100%	2,667	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

² Includes man having sex with a woman of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

³ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

⁴ Total includes numbers suppressed for the assurance of confidentiality

(NH) = Non-Hispanic, API = Asian/Pacific Islander, Und. = Undetermined

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data are current as of 3/1/16 and may be subject to change

Table 6. Number and percentage distribution of men diagnosed with HIV infection by exposure mode and place of birth: Massachusetts¹, 2012–2014²

	MSM		IDU		MSM/ IDU		HTSX		Undeter- mined ³	
	N	%	N	%	N	%	N	%	N	%
United States	645	70%	41	66%	41	80%	23	41%	202	49%
PR/US Depen. ⁴	41	4%	-- ⁵	-- ⁵	-- ⁵	-- ⁵	10	18%	19	5%
Non-US	234	25%	-- ⁵	-- ⁵	-- ⁵	-- ⁵	23	41%	192	46%
Total⁶	920	100%	62	100%	51	100%	56	100%	413	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Includes man having sex with a woman of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

⁴ All people diagnosed with HIV infection from 2012–2014 who were born in a US dependency were born in Puerto Rico.

⁵ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

⁶ Total includes numbers suppressed for the assurance of confidentiality

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data are current as of 3/1/16 and may be subject to change

Table 7. Number and percentage distribution of men living with HIV infection on December 31, 2015 by exposure mode and place of birth: Massachusetts¹

	MSM		IDU		MSM/ IDU		HTSX		Undeter- mined ³	
	N	%	N	%	N	%	N	%	N	%
United States	6,204	81%	1,515	65%	585	83%	360	43%	1,188	45%
PR/US Depen. ⁴	244	3%	700	30%	72	10%	114	14%	163	6%
Non-US	1,235	16%	115	5%	44	6%	354	43%	1,316	49%
Total	7,683	100%	2,330	100%	701	100%	828	100%	2,667	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

² Includes men having sex with a woman of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

³ Ninety-eight percent of people living with HIV infection in MA who were born in a US dependency were born in Puerto Rico, 2% were born in US minor outlying areas <1% were born in the US Virgin Islands, and <1% were born in Guam.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data are current as of 3/1/16 and may be subject to change

Table 8. Number and percentage distribution of men diagnosed with HIV infection with MSM¹ exposure mode by race/ethnicity and place of birth: Massachusetts², 2012–2014

Place of Birth	White Non-Hispanic		Black Non-Hispanic		Hispanic/Latino	
	N	%	N	%	N	%
United States	443	90%	92	73%	94	38%
PR/US Depen. ³	0	0%	0	0%	41	16%
Non-US	49	10%	34	27%	115	46%
Total	492	100%	126	100%	250	100%

¹ Includes primary reported risk as male-to-male sex (MSM)

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

³ PR/US Depen. = Puerto Rico/US Dependency; All people diagnosed with HIV infection from 2012–2014 who were born in a US dependency were born in Puerto Rico.

⁴ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data are current as of 3/1/16 and may be subject to change

Table 9. Number and percentage distribution of men living with HIV infection with MSM¹ exposure mode on December 31, 2015 by race/ethnicity and place of birth: Massachusetts²

MSM	White Non-Hispanic		Black Non-Hispanic		Hispanic/Latino	
	N	%	N	%	N	%
US	4,803	93%	837	82%	455	36%
PR/US Depen. ³	5	<1%	-- ⁴	-- ⁴	235	19%
Non-US	343	7%	-- ⁴	-- ⁴	572	45%
Total⁵	5,151	100%	1,016	100%	1,262	100%

¹ Includes primary reported risk as male-to-male sex (MSM)

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

³ PR/US Depen. = Puerto Rico/US Dependency; 98% of people living with HIV infection who were born in a US Dependency were born in Puerto Rico, <1% were born in the US Virgin Islands, <1% were born in Guam, and 2% were born in an unknown dependency.

⁴ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

⁵ Total includes numbers suppressed for the assurance of confidentiality

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data are current as of 3/1/16 and may be subject to change

Table 10. Number and percentage distribution of men diagnosed with HIV infection by race/ethnicity, age at HIV diagnosis and exposure mode: Massachusetts, 2012–2014²

	White NH				Black NH				Hispanic/Latino			
	13–24		25+		13–24		25+		13–24		25+	
	N	%	N	N	%	N	N	%	N	N	%	N
MSM	67	86%	425	74%	39	68%	87	31%	68	78%	182	51%
IDU	-- ⁴	-- ⁴	16	3%	-- ⁴	-- ⁴	10	4%	0	0%	32	9%
MSM/IDU	-- ⁴	-- ⁴	34	6%	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴	8	2%
HTSX	0	0%	8	1%	-- ⁴	-- ⁴	25	9%	0	0%	22	6%
Other	0	0%	0	0%	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴	0	0%
Undetermined ³	7	9%	88	15%	12	21%	159	56%	16	18%	114	32%
Total⁵	78	100%	571	100%	57	100%	283	100%	87	100%	358	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Includes men having sex with a woman of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

⁴ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

⁵ Total includes numbers suppressed for the assurance of confidentiality

MSM = Male-to-Male Sex; IDU = Injection Drug Use; MSM/IDU = Male-to-Male Sex and Injection Drug Use; HTSX = Heterosexual Sex;

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data are current as of 3/1/16 and may be subject to change

Table 11. Number and percentage distribution of men diagnosed with HIV infection by exposure mode and age at HIV diagnosis: Massachusetts¹, 2012–2014²

Age (years):	MSM		Non-MSM	
	N	%	N	%
Under 13	0	0%	4	1%
13 to 19	24	3%	10	2%
20 to 24	160	17%	38	6%
25 to 29	184	20%	52	9%
30 to 34	126	14%	68	12%
35 to 39	78	8%	62	11%
40 to 44	88	10%	85	14%
45 to 49	129	14%	96	16%
50 to 54	76	8%	72	12%
55 to 59	33	4%	50	8%
60+	22	2%	53	9%
Total	920	100%	590	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data are current as of 3/1/16 and may be subject to change

Table 12. Percentage distribution of people diagnosed with HIV infection by Health Service Region (HSR)¹ and exposure mode: Massachusetts², 2012–2014³

	MSM	IDU	MSM/ IDU	HTSX	Other	Pres. HTSX ⁴	Undet. ⁵	Total
HSR	%	%	%	%	%	%	%	N
Boston	52%	4%	2%	6%	<1%	12%	23%	606
Central	43%	8%	2%	5%	1%	18%	23%	146
Metro West	48%	2%	2%	6%	1%	14%	27%	310
Northeast	40%	6%	3%	10%	1%	14%	27%	392
Southeast	42%	6%	3%	7%	1%	14%	27%	307
Western	41%	7%	2%	11%	<1%	14%	24%	241
Prison ⁶	9%	36%	0%	18%	0%	0%	36%	11
Total	45%	5%	3%	7%	1%	14%	25%	2,027

¹ Reflects the health service region of a person's residence at the time of report (not necessarily current residence). See Epidemiologic Profile General Appendices, Health Service Region Maps, available at http://www.mass.gov/dph/aids/research/profile2005/app5_hrs_maps.pdf for configuration of health service regions.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

³ Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

⁴ Includes woman having sex with a man of unknown HIV status or risk. This category is limited to women.

⁵ Includes man having sex with a woman of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

⁶ HSRs are regions defined geographically to facilitate targeted health service planning. While prisons do not constitute an HSR, the prison population is presented separately in this analysis because of its unique service planning needs. Prisons include only persons who were diagnosed with HIV infection while in a correctional facility

MSM = Male-to-Male Sex; IDU = Injection Drug Use; MSM/IDU = Male-to-Male Sex and Injection Drug Use; HTSX = Heterosexual Sex; Pres. HTSX = Presumed Heterosexual Sex; Undet. = Undetermined

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data are current as of 3/1/16 and may be subject to change

Table 13. Percentage distribution of people living with HIV infection on December 31, 2015 by Health Service Region (HSR)¹ and exposure mode: Massachusetts²

HSR	MSM	IDU	MSM/ IDU	HTSX	Other	Pres. HTSX ³	Undet. ⁴	Total
	%	%	%	%	%	%	%	N
Boston	48%	12%	4%	12%	2%	8%	14%	6,379
Central	27%	24%	3%	18%	3%	12%	13%	1,708
Metrowest	42%	9%	3%	13%	2%	11%	19%	2,999
Northeast	33%	14%	3%	15%	2%	12%	21%	3,278
Southeast	40%	18%	3%	15%	2%	8%	14%	2,803
Western	28%	26%	3%	17%	3%	9%	14%	2,191
Prison ⁵	8%	65%	8%	6%	<1%	1%	12%	879
Total⁶	38%	18%	3%	14%	2%	9%	16%	20,272

¹ Reflects the health service region of a person's residence at the time of report (not necessarily current residence). See Epidemiologic Profile General Appendices, Health Service Region Maps, available at http://www.mass.gov/dph/aids/research/profile2005/app5_hrs_maps.pdf for configuration of health service regions.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases for all years presented that were first diagnosed in another state before being reported in Massachusetts.

³ Includes woman having sex with a man of unknown HIV status or risk. This category is limited to women.

⁴ Includes man having sex with a woman of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

⁵ HSRs are regions defined geographically to facilitate targeted health service planning. While prisons do not constitute an HSR, the prison population is presented separately in this analysis because of its unique service planning needs. Prisons include only persons who were diagnosed with HIV/AIDS while in a correctional facility. These data do not reflect current incarceration status.

⁶ Mass. total includes 35 persons living with HIV infection with unknown residence at time of report.

MSM = Male-to-Male Sex; IDU = Injection Drug Use; MSM/IDU = Male-to-Male Sex and Injection Drug Use; HTSX = Heterosexual Sex; Pres. HTSX = Presumed Heterosexual Sex

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data are current as of 3/1/16 and may be subject to change

Table 14. Rank of the ten cities/towns¹ in Massachusetts by the highest proportion of Male-to-Male Sex (MSM) as primary reported exposure mode among HIV infection diagnoses (HIV Dx): 2012–2014²

Rank	City/Town	Number of HIV Dx among MSM	Percent of Total HIV Dx
1	Revere	18	66.7%
2	Quincy	19	61.3%
3	Cambridge	22	57.9%
4	Somerville	21	55.3%
5	Fall River	17	53.1%
6	Boston	279	51.4%
7	Chelsea	17	47.2%
8	Holyoke	11	45.8%
9	Everett	12	41.4%
10	Chicopee	8	40.0%
	All Others	496	41.0%
	Massachusetts Total	920	45.4%

¹ Among cities/towns with over 20 reported HIV Infection diagnoses in the years 2012–2014. Note: reflects the city/town of a person's residence at the time of report (not necessarily current residence). People diagnosed while at a correctional facility are not included.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data are current as of 3/1/16 and may be subject to change

Technical Notes:

Table 15 includes data from the Behavioral Risk Factor Surveillance System (BRFSS), a random-digit-dial telephone survey of Massachusetts residents through anonymous telephone interviews from 2013 to 2014. This ongoing survey covers a broad range of topic areas (including risk related to sexual activity) and is part of a CDC-funded national survey program. See <http://www.mass.gov/eohhs/gov/departments/dph/programs/admin/dmoa/health-survey/brfss/> for more information.

Table 15. Percentage distribution and total number of men ages 18–64¹ reporting same-sex partner (or opposite- and same-sex partners)² and men reporting only opposite-sex partner² by number of sexual partners in the past year and condom use at last sexual encounter: Massachusetts, 2013–2014

	Men Reporting Same-Sex Partner or Opposite- and Same-Sex Partners	Men Reporting Only Opposite-Sex Partner
Number of Sexual Partners:	% (Confidence Interval)	% (Confidence Interval)
1 partner	52.3 (28.8 – 75.9)	84.6 (79.7 – 89.6)
2 or more partners	47.7 (24.1 – 71.2)	15.4 (10.4 – 20.3)
Total n	70	969
Condom Use: ³	%	%
Yes	55.3 (33.0 – 77.6)	24.8 (19.8 – 29.9)
No	44.7 (22.4 – 67.0)	75.2 (70.1 – 80.2)
Total n	70	970

¹ Sexually active in past year

² During the past 12 months

³ At last sexual intercourse

Note: Caution should be used in interpreting these results as the effective sample size is small and confidence intervals are wide. There are no significant differences between any years in the percent who used a condom at last intercourse.

Data Source: Massachusetts Behavioral Risk Factor Surveillance System (BRFSS), 2013-2014

Technical Notes:

Tables 16–18 include data from the Massachusetts Youth Risk Behavior Survey (YRBS) among students in randomly selected Massachusetts public high schools, and conducted every odd year from 1993 to 2013. This anonymous survey is administered by the Massachusetts Department of Elementary and Secondary Education in collaboration with the Centers for Disease Control and Prevention and focuses on risk behaviors that may affect the health and/or safety of high school students. See <http://www.doe.mass.edu/cnp/hprograms/yrbs/> for more information.

Table 16. Percentage distribution and total number of sexually active male respondents to the Youth Risk Behavior Survey (YRBS) by sex of sexual partner(s) and year: Massachusetts, 1997–2013¹

Year	Same-Sex/ Both Sexes		Opposite-Sex	
	Total n ²	%	Total n ²	%
1997	69	6.6%	941	93.4%
1999	89	7.0%	1,169	93.0%
2001	63	5.1%	1,080	94.9%
2003	59	6.1%	931	93.9%
2005	79	8.0%	881	92.0%
2007	70	8.0%	843	92.0%
2009	70	7.5%	802	92.5%
2011	66	7.5%	743	92.5%
2013	48	6.8%	678	93.2%

¹ A random sample of high schools is selected for participation each year, data presented do not represent cohorts followed over time

² Total N = total number of respondents by sex of partner (unweighted). The number of respondents for each question varies from year to year

Data Source: Massachusetts Department of Elementary and Secondary Education, Massachusetts Youth Risk Behavior Survey (MYRBS), 1997–2013

Table 17. Percentage and total number of male respondents reporting sexual behaviors to the YRBS by sex of partner: Massachusetts, 2011–2013

	Sex of Partner			
	Opposite-Sex		Same-Sex/ Both Sexes	
By Behavior:	Total n ²	% ¹	Total n ²	% ¹
Ever had sexual intercourse ³	1,288	75.0	92	75.4
Sexual intercourse before age 13	1,278	8.8	92	14.7
4 or more lifetime sexual intercourse partners	1,278	20.2	91	30.4
4 or more sexual intercourse partners in last 3 months	968	4.8	69	17.2
Alcohol/drugs used at last intercourse ⁴	652	28.2	43 ⁵	42.4
Condom used at last intercourse ⁴	640	66.5	45 ⁵	42.1
Ever been diagnosed with any STD	1,404	1.9	113	6.9
Ever injected illegal drugs	1,416	2.1	109	13.5

¹ % = percent of total responding "yes" to specified question

² N = total number of respondents (unweighted) by sex of partner for each question. The number of respondents for each question varies because some survey participants do not answer all questions.

³ Among men who reported any sexual contact with opposite sex partner, same sex partner, or both

⁴ Among men reporting sexual intercourse in the past three months

⁵ This estimate may be unreliable due to a Relative Standard Error of greater than 30% and N < 50, interpret with caution.

Data Source: Massachusetts Department of Elementary and Secondary Education, Massachusetts Youth Risk Behavior Survey (MYRBS), 2011-2013

Table 18. Percentage distribution and total number of YRBS male respondents reporting condom use at last sexual intercourse¹ by year and sex of partner: Massachusetts, 1993–2013

Year	Opposite-Sex		Same-Sex/ Both Sexes		Total	
	Total n ²	%	Total n ²	%	Total n ²	%
1993	384	58.5%	24 ³	42.3%	409	57.4%
1995	519	60.3%	28 ³	40.0%	623	59.9%
1997	480	65.4%	34 ³	45.5%	517	64.2%
1999	542	64.4%	44 ³	39.1%	589	62.6%
2001	506	63.6%	27 ³	18.5%	553	61.6%
2003	395	62.0%	27 ³	29.6%	424	60.3%
2005	403	72.7%	36 ³	56.6%	442	71.6%
2007	392	65.0%	27 ³	38.5%	419	63.4%
2009	367	68.0%	41 ³	47.0%	409	65.7%
2011	346	65.8%	24 ³	43.9%	373	64.5%
2013	294	67.3%	21 ³	40.1%	323	65.2%

¹ Among youth reporting sexual intercourse in the past three months

² Total N = total number of respondents by sex of partner (unweighted). The number of respondents for each question varies from year to year.

³ This estimate may be unreliable due to a Relative Standard Error of greater than 30% and N < 50, interpret with caution.

Data Source: Massachusetts Department of Elementary and Secondary Education, Youth Risk Behavior Survey (YRBS), 1993–2013

Table 19. Number and percentage of infectious syphilis cases that were among men who reported male-to-male sex (MSM): Massachusetts, 2005–2014

Year	Number of Cases among MSM	Total Number of Cases	Proportion of Cases among MSM
2005	167	231	72%
2006	157	219	72%
2007	184	268	69%
2008	305	366	83%
2009	306	380	81%
2010	384	465	83%
2011	388	500	78%
2012	438	561	78%
2013	536	701	76%
2014	397	600	66%

Data Source: MDPH Division of STD Prevention, Data are current as of 7/1/15 and may be subject to change

Table 20. Number and percentage distribution of infectious syphilis cases among men who reported MSM by HIV status and year of diagnosis: Massachusetts, 2005–2014

Year	HIV-Positive		HIV-Negative/ Unknown Serostatus		Total
	N	%	N	%	N
2005	86	51%	81	49%	167
2006	79	50%	78	50%	157
2007	89	48%	95	52%	184
2008	132	43%	173	57%	305
2009	138	45%	168	55%	306
2010	158	41%	226	59%	384
2011	154	40%	234	60%	388
2012	188	43%	250	57%	438
2013	232	43%	304	57%	536
2014	158	40%	239	60%	397

Data Source: MDPH Division of STD Prevention, Data are current as of 7/1/15 and may be subject to change